B4881V50S4H

User Manual

Document part number: D1652-100

Preface

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Version 1.00

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Federal Communications Commission

Notice for the USA Compliance Information Statement (Declaration of Conformity Procedure) DoC FCC Part 15: This device complies with part 15 of the FCC Rules

Operation is subject to the following conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received including interference that may cause undesired operation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Plug the equipment into an outlet on a circuit different from that of the receiver.

Consult the dealer or an experienced radio/television technician for help.

Notice for Canada

This apparatus complies with the Class B limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations. (Cet appareil est conformé aux norms de Classe B d'interference radio tel que specifie par le Ministere Canadien des Communications dans les reglements d'interférence radio.)

Notice for Europe (CE Mark) This product is in conformity with the Council Directive 89/336/EEC, 92/31/EEC (EMC).

CAUTION: Lithium battery included with this board. Do not puncture, mutilate, or dispose of battery in fire. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by manufacturer. Dispose of used battery according to manufacturer instructions and in accordance with your local regulations.

About this manual

This manual provides you with instructions on installing your B4881V50S4H, and consists of the following sections:

Chapter 1 – Overview:

Provides an introduction to the B4881 V50S4H barebones, shows a packing list, describes the external components, shows tables of key components, and provides a block diagram of the system.

Chapter 2 – Setting up:

Covers procedures on installing the CPUs, memory modules, optional PCI card, and hard drives.

Chapter 3 – Replacing pre-installed components:

Covers removal and replacement procedures for pre-installed components.

Appendix:

Provides detailed specifications, maintenance and troubleshooting procedures, an explanation of BIOS, and technical diagrams.

Safety information

Before installing and using the B4881V50S4H, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots or openings on the unit which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure about your power source, contact the power company.
- The unit uses a three-wire grounded cable, which is supplied with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this type of plug, contact an electrician to replace the obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be stepped on.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots, as they may touch high voltage components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manufacturer.
- When service or repairs have been carried out, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.
- Disassembly of this unit should not be attempted by unqualified persons. When the chassis cover is removed there is a danger of electric shock and risk of damage to the system.
- Do not attempt to lift or move this product alone. When moving this product, at least two people should lift it onto a suitable trolley or cart. When bolting the product into a rack, two people should hold the device in place while a third person bolts the device securely to the rack.

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Chapter 1: Overview

1.1 About the B4881V50S4H

Congratulations on your purchase of the B4881V50S4H, rack mountable or standalone, barebone system. This product supports up to 8 AMD Opteron™ 800 series processors and 128 GB of registered DRAM, offering exceptional computing power and simultaneous support of 32-bit and 64-bit applications. The following models and processors are supported:

Model Number	Processor support
B4881V50S4H -4P	Up to 4 CPUs
B4881V50S4H -8P	Up to 8 CPUs

Hot swap SATA or SCSI hard disk drives provide convenient and resilient data storage capacity, and on-board Gigabit Ethernet ports ensure high-speed data communication.

The rugged, rack mountable design includes eight HDD bays and one slim CD-ROM bay.

WARNING: This product is very heavy and should not be lifted by a single person. When installing this product in a rack, we recommend that at least two people lift the server while a third person guides it into place and tightens the fixings. Always use a suitable trolley or cart to transport the device.

1.2 Features

Enclosure
- Industry standard pedestal or 19-inch rack mountable, 5U chassis
- (4) hot swap SATA HDD bays
- (4) internal HDD bays (upgradable to hot swap bays)
- (1) slim CD-ROM drive bay
- (1) standard FDD bay
- (3) 3.5-inch device bays
- Dimensions:
  - 26.8 x 16.7 x 8.7-inch (5U)
  - 680 x 425 x 220 mm

Storage Controller
- (2) dual port SATA II controllers integrated in NVIDIA nForce4 Pro chip
- Support for up to four SATA HDDs
- Supports 3 Gb/s per port, 1.5 Gb/s in each direction per channel
- Support for RAID 0, 1, 0+1, and NVIDIA Morphing RAID

Motherboard
- Tyan Thunder K8QW Pro S4881
- SSI EEB 3.5 footprint (13 x 16-inch)

Processors
- Support for up to eight AMD® Opteron™ 800 series processors.

CPU board (8 processor only)
- Tyan M4881
- 13 x 12-inch

Chipset
- NVIDIA nForce4 Professional + AMD-8131 HyperTransport PCI-X tunnel
- Winbond W83627HF Super I/O chip
- ADT7468 hardware monitor IC

BIOS
- Phoenix 8Mbit LPC Flash ROM
- Serial Console Redirect
- USB device boot
- ACPI 2.0 power management support

Memory
- (16) 184-pin 2.5V DDR DIMM sockets on S4881 motherboard
- (16) 184-pin 2.5V DDR DIMM sockets on M4881 CPU board
- Up to 128 GB of registered, ECC DDR400/333/266 memory

Networking
- (2) Gbit Ethernet ports (Broadcom® BCM5704 dual port controller)

Video
- ATI® Rage™ XL PCI Graphics controller
- 8 MB Frame Buffer video memory

Expansion slots
- (2) 16 PCI Express slots (one with x4 signal)
- (2) Independent 64-bit PCI-X bus
- (1) 64-bit 133 MHz (3.3V) PCI-X slot
- (2) 64-bit 100 MHz (3.3V) PCI-X slot

Server Management
- Automatic fan speed control
- Chassis intrusion alert
- Tyan Server Management Support
- Tyan SMDC, IMPI v 1.5 compliant remote server management kit (option)

Back I/O ports
- PS/2 mouse and keyboard ports
- (2) RJ-45 10/100/100BaseT with activity LED
- (2) USB 2.0 ports
- (1) 9-pin UART serial port
- (1) 15-pin VGA port

Front panel
- (2) USB 2.0 ports
- LED indicators (power, LAN x2, HDD activity, ID)
- Switches (power, reset, ID)

Power supply
- (4) redundant power supply modules, 4 x 500 watt.

Regulatory
- FCC Class A (declaration of conformity)
- CE (declaration of conformity)

1.3 Unpacking

This section describes the B4881V50S4H package contents and accessories.

1.3.1 Box contents

Component	Description
	Industry standard 5U chassis with eight HDD bays and three further 5.24-inch device bays
	Tyan S4881 and M4881 motherboard (pre-installed)
	Tyan M4881 CPU board (8 processor only) and two HyperTransport (HT) cards (required to mount CPU board to motherboard)
	SATA backplane (pre-installed)
	SCSI backplane (option)
	24x slim CD-ROM (pre-installed)
	Floppy disk drive (pre-installed)

Component	Description
	Up to four 500W hot-swap power supplies
	Three system cooling fans (pre-installed) 120 x 120 x 38 mm
	Four or eight processor heatsink assemblies (pre-installed)

1.3.2 Accessories

Rack mounting kit; mounting ears, and rail assembly

Cable set:
- (4) SATA cables
- (1) 40-pin IDE ribbon cable
- (1) 34-pin FDD ribbon cable
- (8) power cord 4 x US, 4 x EU

Four feet for standalone use

Four internal hard disk drive mounting kits

Driver CD and diskettes

Motherboard and system manual

1.3.3 Opening the box

Open the box carefully and ensure that all components are present and undamaged. The product should arrive packaged as illustrated below.

Accessory pack

Power cables and disk mounting kit

Server door

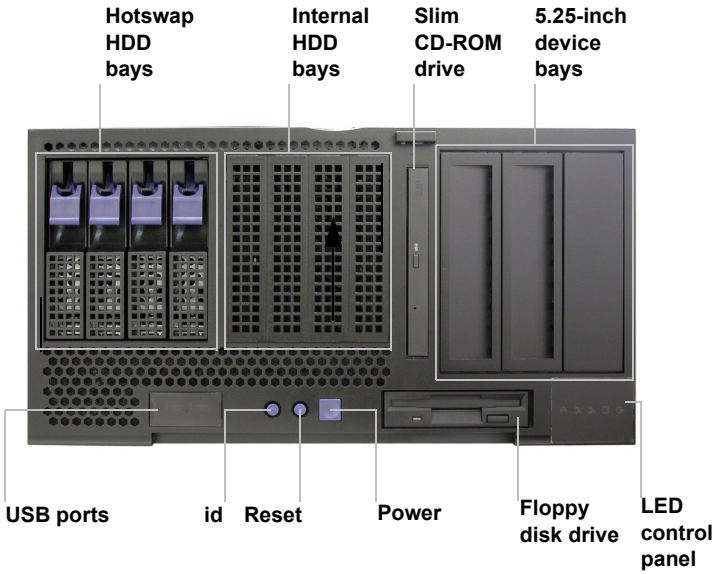
Contact your distributor if anything is missing or appears damaged.

1.4 About the product

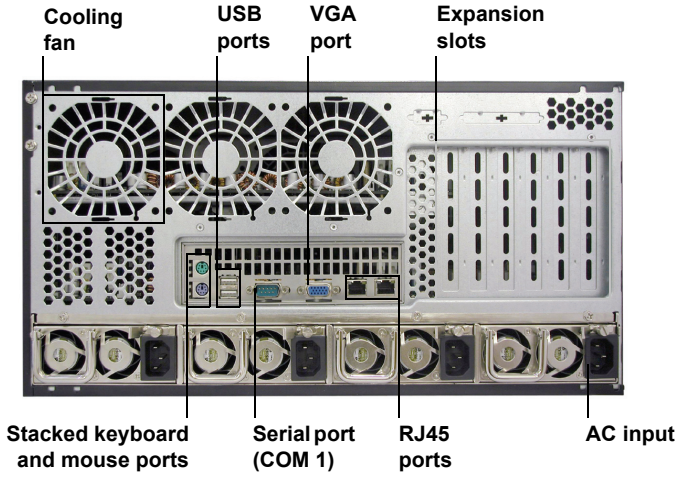
This section contains hardware diagrams and a block diagram of the B4881V50S4H system.

1.4.1 System front view and front panel

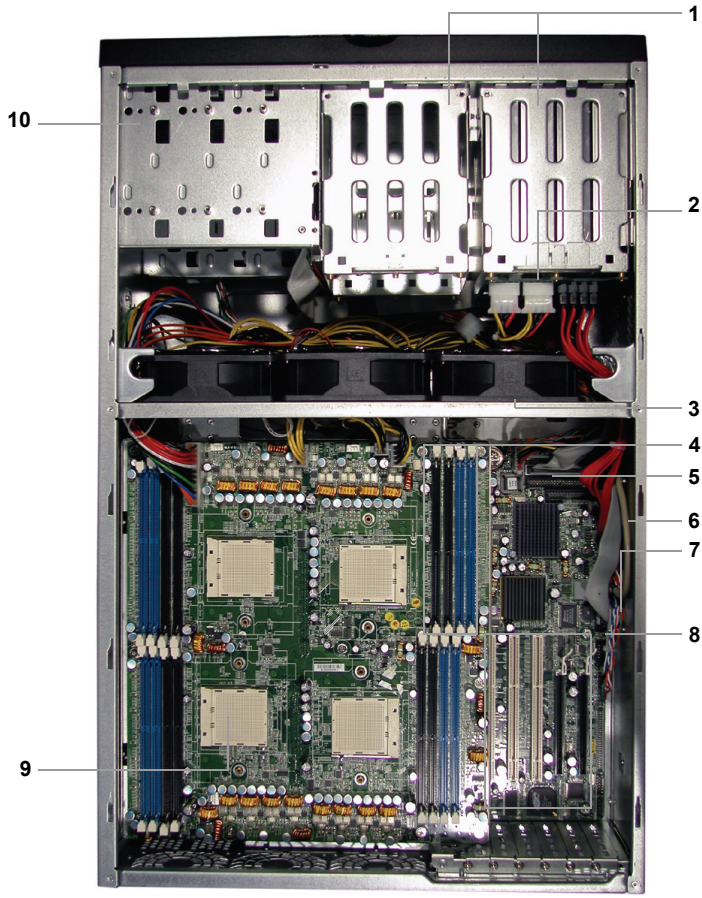
See the diagram below for details of the front panel indicators and switches.



1.4.2 System rear view

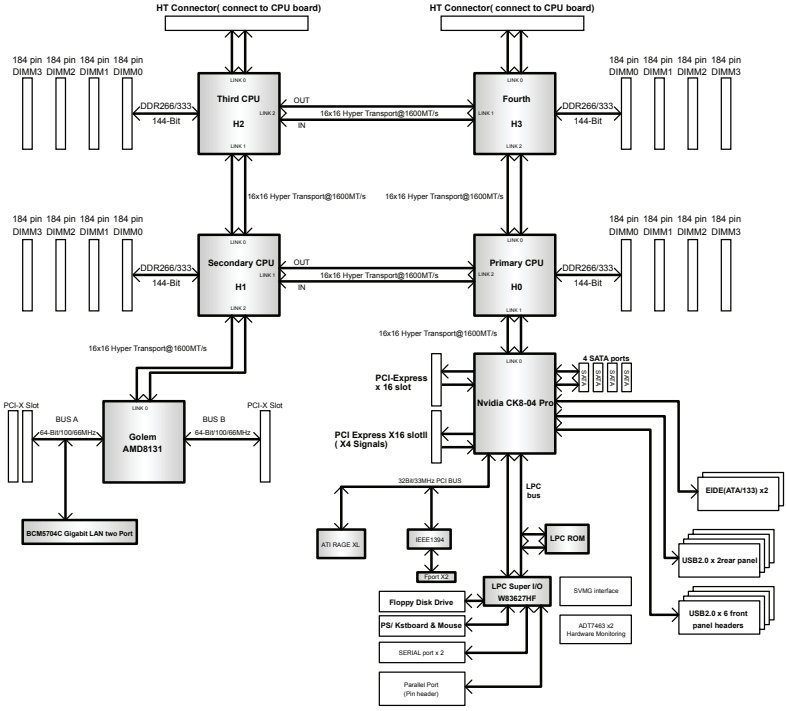


1.4.3 System internal view

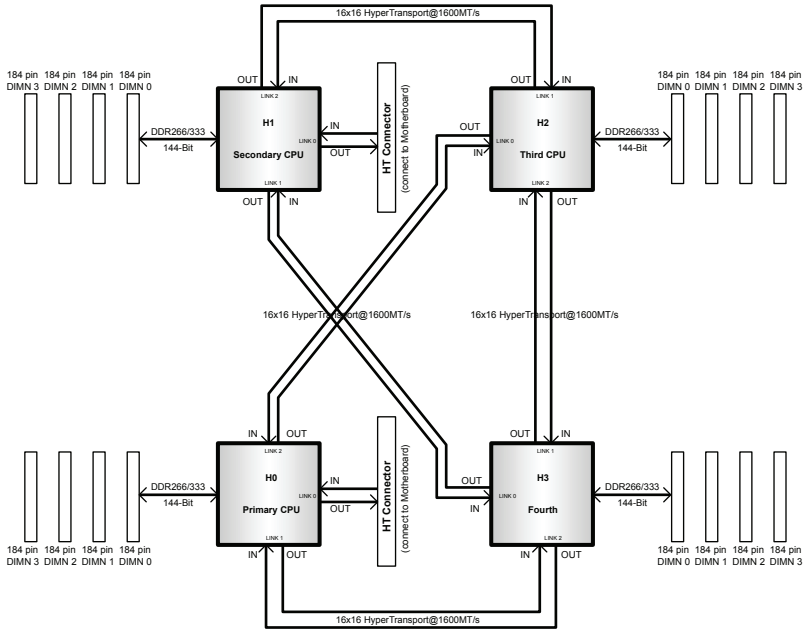


1	Hard disk drive cradles	6	SATA ports
2	SATA backplane	7	Floppy disk drive socket
3	System cooling fans	8	PCI slots
4	Memory bank	9	CPU
5	IDE socket (CD-ROM drive)	10	Cradle for 5.25-inch devices

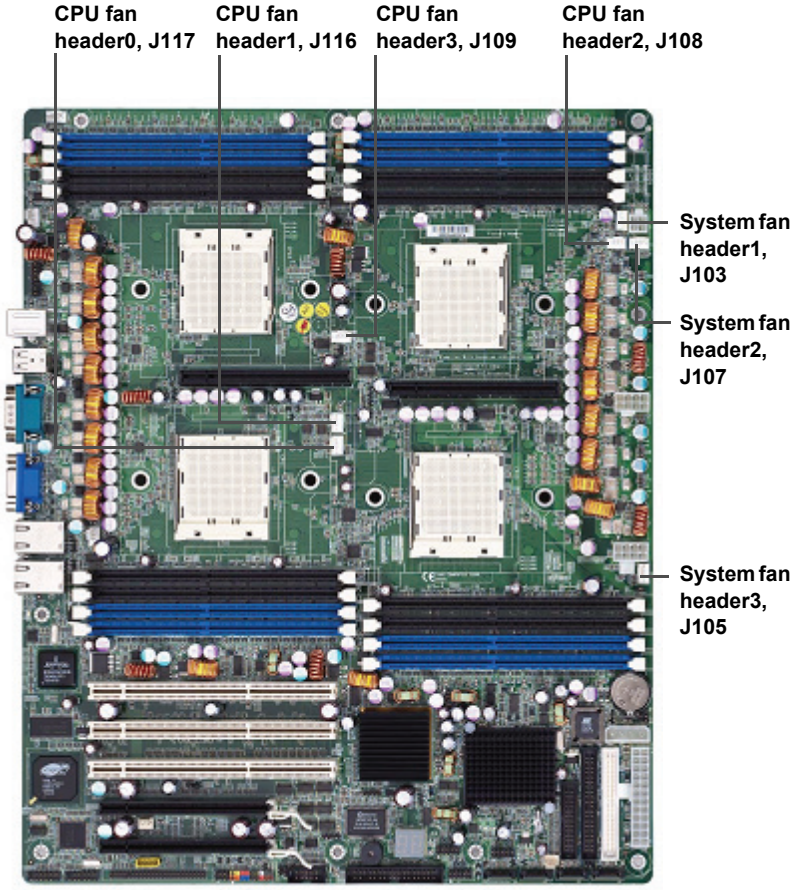
1.4.4 Motherboard block diagram



1.4.5 CPU board block diagram



1.4.6 Fan header locations


CPU fan header0, J117
CPU fan header1, J116
CPU fan header3, J109
CPU fan header2, J108
System fan header1, J103
System fan header2, J107
System fan header3, J105

Chapter 2: Setting up

2.1 Before you begin

This chapter explains how to install motherboard components, including CPUs, memory modules, and PCI cards. There are also instructions in this section for installing SATA hard drives.

Careful attention should be given to the precautions mentioned in this section when setting up your system.

2.1.1 Work area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.1.2 Tools

The following tools will be required to complete the installations described in this chapter.

- A cross head (Phillips) screwdriver
- A grounding strap and/or anti-static pad

Most of the electrical and mechanical connectors in your system can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.1.3 Precautions

Components and electronic circuit boards can be damaged by static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the B4881V50S4H or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, or leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.
- Always use the correct size screws and fixings when installing or replacing components.

Note:	All connectors are designed to fit one way only, no force should required to make a connection.

2.2 Installing motherboard components

This section describes how to install CPUs, memory modules, and expansion cards.

2.2.1 Removing the chassis cover

Follow these instructions to remove the chassis cover. This step is required before any other procedures in this chapter can be undertaken.

1. Press the two blue buttons on the release catches and lift the catches.
   The chassis lid slides back slightly.

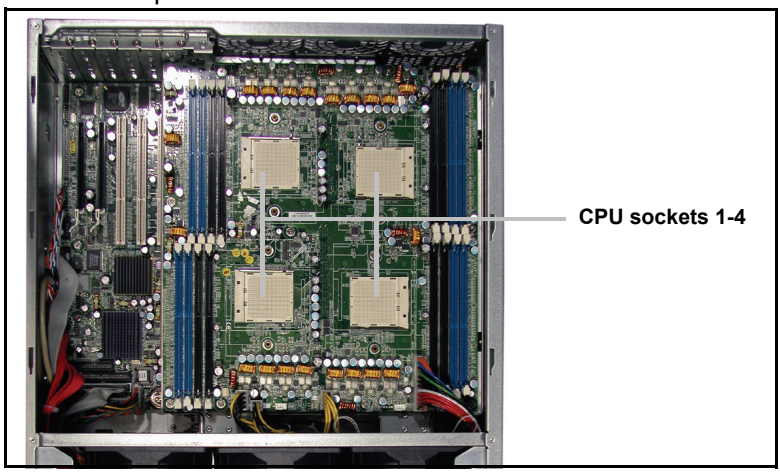
2. Lift the lid free from the chassis.

Refitting the chassis cover is a reverse of the removal process. Place the lid on the chassis and push it forward into place before tightening the screw on the rear of the unit.

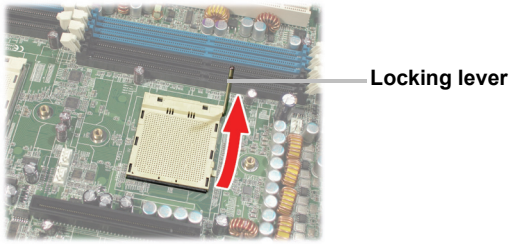
2.2.2 Installing CPUs and heatsinks

This section describes how to install AMD Opteron processors and heatsinks on the B4881V50S4H motherboard and CPU expansion board.

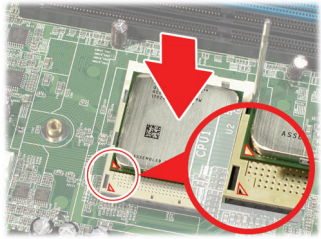
1. Remove the chassis cover. See *Removing the chassis cover* on page 13.
2. Remove the optional processor board if it is present, see “Replacing the CPU expansion board” on page 37
3. Locate the four CPU sockets on the motherboard or CPU expansion board.



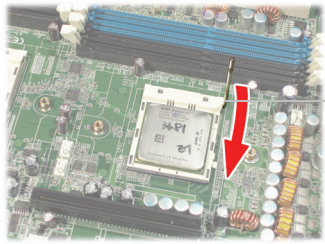
4. Lift the locking lever on the CPU socket to the upright position.



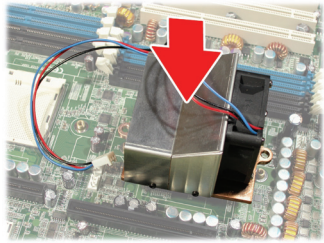
5. Place the CPU in the socket as shown, making sure that pin 1 is located correctly.



6. Push the CPU locking lever down to lock the CPU in place.

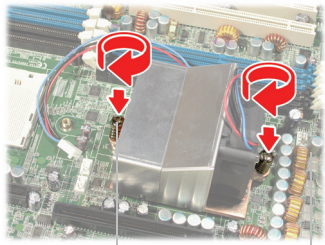


7. Take a new heatsink and remove all packaging and covers from it.
8. Apply some thermal grease to the top of the CPU and place a heatsink on top of the CPU as shown.



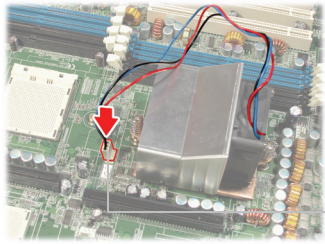
Note:	All heatsink fans must face the rear of the chassis to ensure proper airflow.

9. Screw the heatsink to the heatsink retainer as shown.



Heatsink retainer screws

10. Plug the cooling fan lead into a CPU fan pin header as shown.



CPU cooling fan pin header

11. Repeat steps three to seven with the other CPUs.

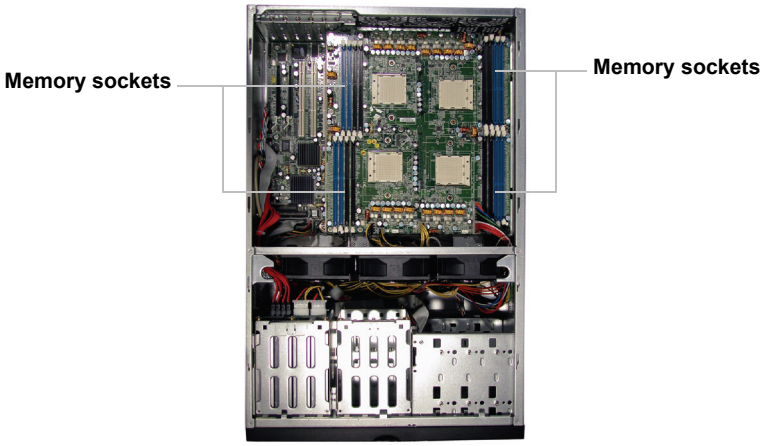
Note:	CPU and heatsink installation is the same for CPUs on the motherboard or on the CPU expansion board.

2.2.3 Installing memory

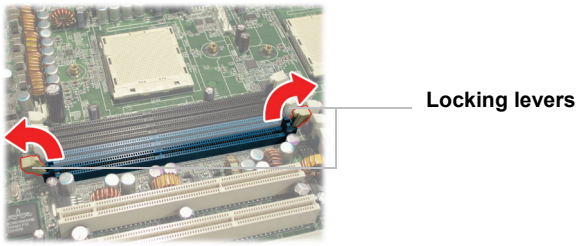
Follow the instructions in this section to install memory modules in your B4881V50S4H system.

1. Remove the chassis cover. See *Removing the chassis cover* on page 13.

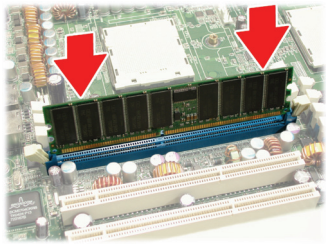
2. Locate the memory sockets on the motherboard or CPU expansion board.



3. Move the memory slot locking levers to the widest position as shown.

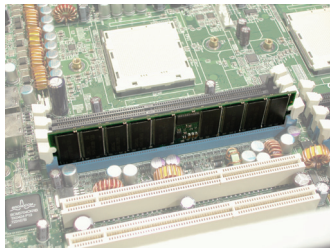


4. Position the memory module in the slot.



Note:	Memory modules will fit in the slot only one way. Ensure that the notches in the memory modules line up with the corresponding bumps in the socket.

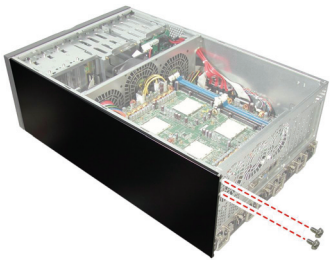
The locking levers will return to the locked position. Make sure that the memory module is firmly in place.

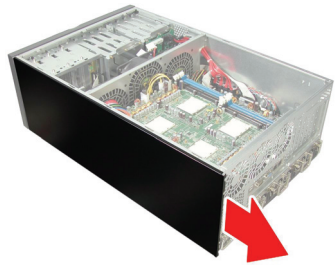


2.2.4 Installing CPU expansion board

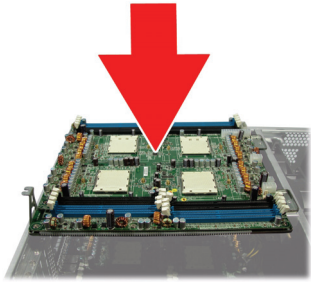
The CPU expansion board can accommodate a further four processors and 16 memory DIMMS.

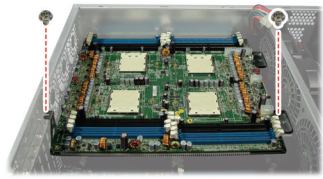
1. Remove the chassis cover. See *Removing the chassis cover* on page 13.
2. Remove the chassis side panel as shown.





3. Place the HT board guides in place on the motherboard sockets.
4. Position the CPU expansion board in place over the motherboard. Ensure that the HT cards are located correctly above the HT card sockets on the motherboard.

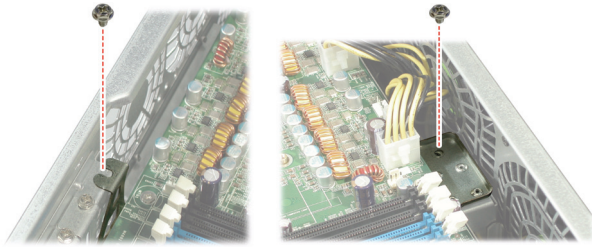




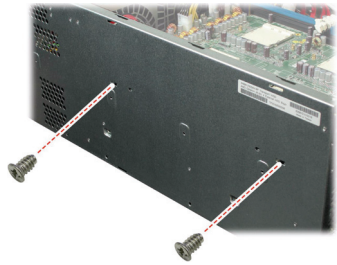
5. Push the CPU expansion board firmly into place.

Note:	Do not use excessive force to push the CPU expansion board into place. When properly aligned, the board should slot into place easily.

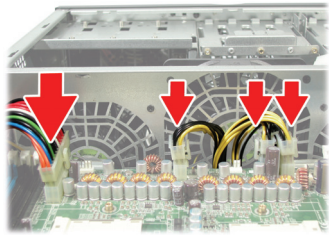
6. Secure in place with two screws as shown.



7. Insert two further coutersunk screws through the chassis to secure the expansion board to the chassis as shown.



8. Connect the five power cables as shown.



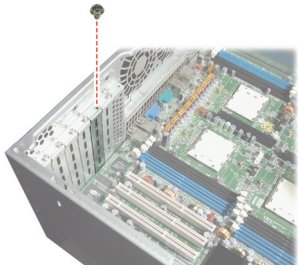
9. Replace the chassis covers.

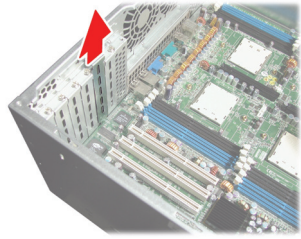
Screws Required	Location
4 hex head #6-32-L6	Chassis cover and CPU board

2.2.5 Installing PCI-X cards

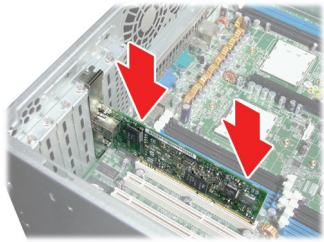
Follow the instructions in this section to install a PCI card in your system.

1. Remove the chassis cover. See *Removing the chassis cover* on page 13.
2. Remove a blanking plate from the rear panel of the chassis as shown.





3. Insert the PCI/PCI-X card into a spare slot as shown.



4. Secure the PCI card with the screw you removed with the blanking plate.

Screws Required	Location
1 hex head #6-32-L6	PCI card

2.3 Installing hard drives

The B4881V50S4H supports eight, hot-swappable SCSI or SATA hard drives. The unit is shipped with four hot-swap bays and a SATA back plane. A further four hot-swap bays can be added with either a SATA or SCSI backplane.

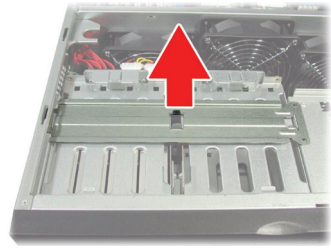
2.3.1 Installing a storage backplane

The B4881V50S4H is shipped with a single SATA backplane installed that can support up to four hot-swap SATA hard disks. A second SATA backplane can be installed or a similar SCSI backplane can be installed. The installation process for SCSI and SATA backplane is the same.

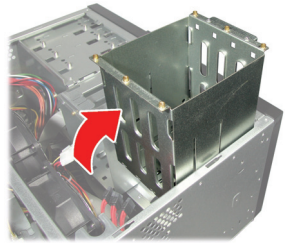
Note: Up to 8 hot-swap SCSI or SATA drives can be supported when two backplanes are installed.

To install a storage backplane:

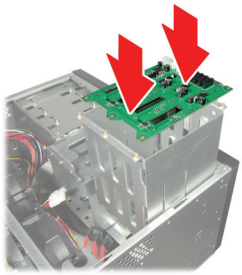
1. Remove the chassis cover. See *Removing the chassis cover* on page 13.
2. Remove the two screws holding the cradle locking bar in place and remove the bar.

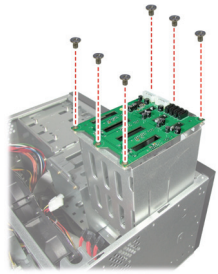


3. Lift the drive housing to the vertical position.

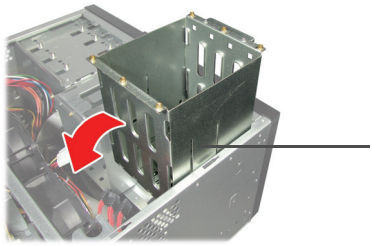


4. Fix the storage backplane to the drive housing using six screws.

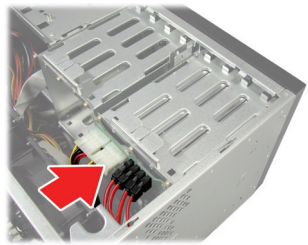




5. Press the drive housing release button and lower the drive housing back into place.



6. Connect power and data cables to the backplane.



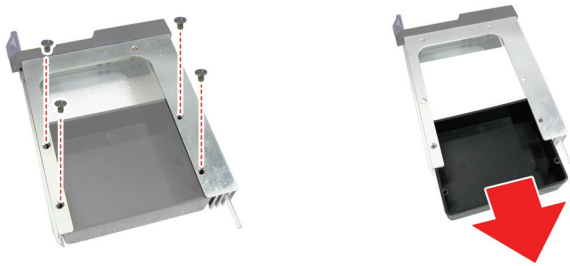
Note: The B4881V50S4H is not shipped with a SCSI controller as standard. If you want to add a SCSI backplane, a PCI-X SCSI controller must also be added. See “Installing PCI-X cards” on page 20.

Screws Required	Location
6 Pan Head screws, #6-32-L6 B type	Backplane
2 Hex head #6-32-L6	Cradle locking bar

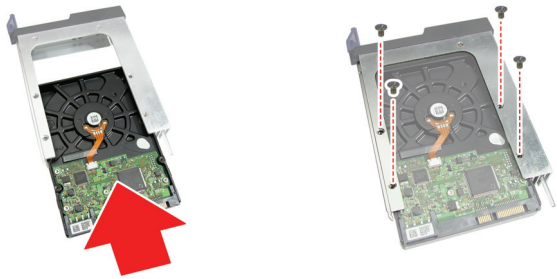
2.3.2 Installing SATA/SCSI hot swap drives

1. Press the release clip and pull the release lever to unlock the drive tray from the chassis.
2. Pull the empty drive tray from the chassis.

3. Remove the four screws holding the plastic spacer in place in the drive tray and remove it from the tray.



4. Place a SATA or SCSI drive in place in the drive tray and secure with four screws.



Note:	The product is shipped with a SATA back-plane. To install hot-swap SCSI drives, the optional SCSI backplane must be fitted.

5. Insert the drive tray back into the chassis and push the locking lever into place to secure it.

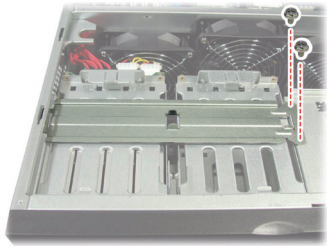
2.3.3 Installing internal hard drives

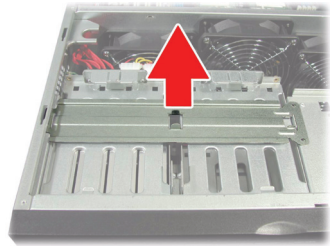
The B4881V50S4H ships with four drive bays that can each accommodate a standard SCSI, SATA, or IDE hard disk.

1. Attach a rail to each side of new hard disk. Ensure that the locking clip faces the rear of the drive. Use two screws for each rail.

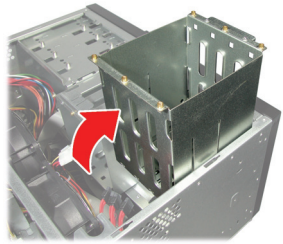
2. Remove the chassis cover. See *Removing the chassis cover* on page 13.

3. Remove the two screws holding the cradle locking bar in place and remove the bar.

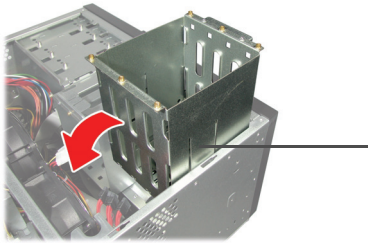




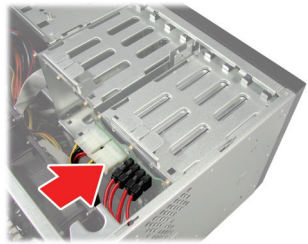
4. Lift the drive housing to the vertical position as shown.



5. Slide the new drive into place until it locks.
6. Press the drive housing release button and lower the drive housing back into place.



7. Connect power and data cables to the new drive.

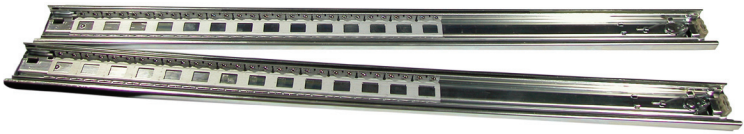


Screws Required	Location
6 hex head #6-32-L6	Cradle locking bar and HDD rails

2.4 Rack mounting

The B4881V50S4H can be mounted in a standard rack using the rail assembly supplied.

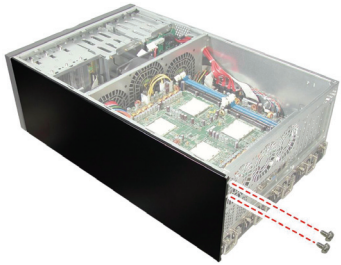
1. Remove the thin, center rail from each sliding rail set.

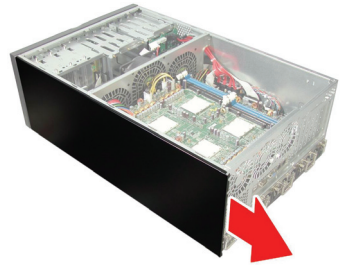


2. Take the remaining rails and attach the short L sections to them using the two M4L4-H2.4 screws and washers - 4.2L10-0.8.

Note: Measure the depth of the cabinet and make the rails exactly the right length to fit. The L sections have long slits in them to allow them to be fixed to the other part of the rails in various positions.

3. Bolt the assembled rail sets to the rack using M5L8-H3 screws.
4. Remove the top, black panel from the server to reveal the rail mounting screws beneath.

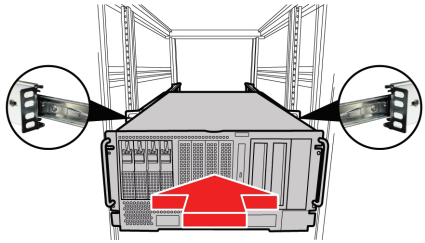




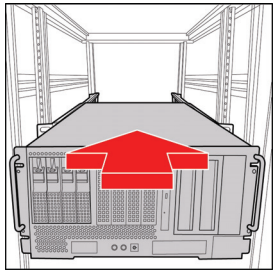
5. Bolt one of the thin, center sliding rails to each side of the server using M4L6-H2.5 screws. Ensure that each rail is bolted on the right way round as shown.

6. Bolt the ears to the front of the server chassis as shown.

7. Lift the server up to the level of the rack and slide it between the rails mounted in the rack.



8. Bolt the ears to the rack using M5L15-H3 screws to secure the server in place.



Note: When the rails are extended, they will lock. To shorten the rails again, you will need to operate the release mechanism in each rail.

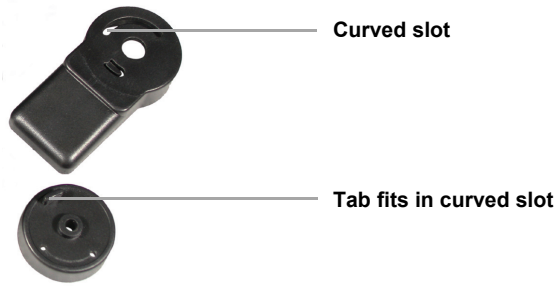
Screws Required	Location
2 hex head #6-32-L6	Chassis cover
8 flat head M5L8	Rackmount ears
8 flat head M4L6-H2.5	Sliding rail / chassis

2.5 Standalone

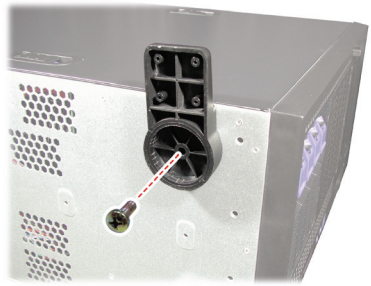
The B4881V50S4H can be used as a standalone device when fitted with the plastic feet in the accessory pack. When used as a standalone device, the feet must be fitted to prevent the unit from falling over.

The four feet should be attached as follows:

1. Each foot consists of two pieces. Insert the round piece of the foot into the other foot section. The small plastic tab on the round piece should fit into the curved slot on the other piece.



2. Use a single screw through the center of the round section to fasten the foot assembly to the bottom of the chassis. The plastic tab that protrudes through the curved slot should fit into an indent in the chassis case.
When fitted, each foot should rotate about 90°.



3. Fit all four feet in the same way.

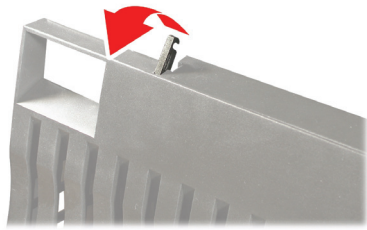
Note: When using as a standalone unit, all four feet should be fitted and extended fully to prevent instability.

Screws Required	Location
Pan Head, M5L20	Foot screws

2.6 Fitting the front door assembly

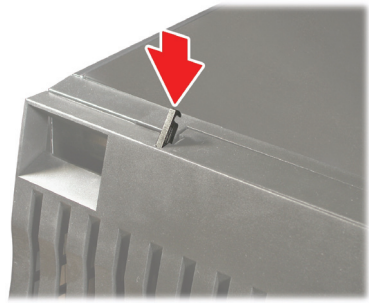
A door is supplied with the B4881V50S4H that can be used when the unit is rack mounted or standalone. To attach the door:

1. Release the hinge clip from the top of the hinge section on the door.



2. Insert the top hinge pin into the hole in the server casing. Align the lower hinge pin with the hole in the casing and lower the door into place.

3. Replace the hinge clip on the top hinge pin.



Chapter 3: Replacing pre-installed components

3.1 Introduction

This chapter describes how to replace all the pre-installed components of your B4881V50S4H, including PCI-X cards, motherboard, CD-ROM drive, and floppy disk drive. There is also a section covering the replacement of the SATA back-plane.

Before you attempt to replace any components, make sure you have read section 2.1 *Before you begin*, in chapter 2, which describes the precautions you need to take and the tools you will require.

3.2 Replacing motherboard components

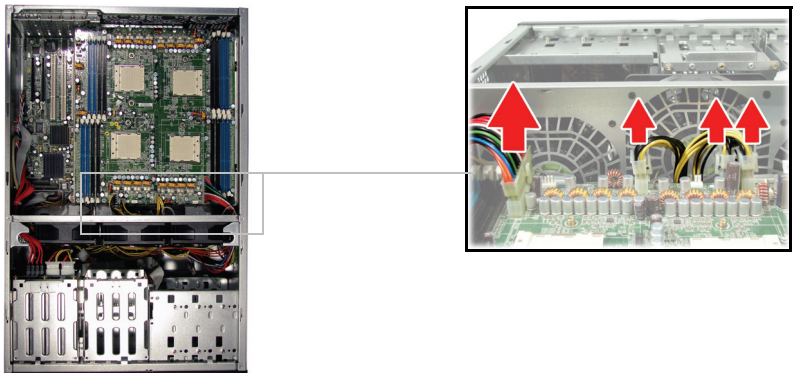
This section describes how to replace pre-installed mother-board components.

3.2.1 Disconnecting all motherboard cables

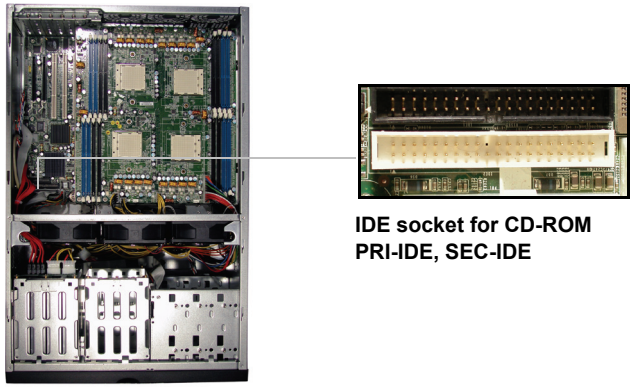
When replacing the motherboard, CPU board or certain motherboard or CPU board components, it may be necessary to remove cables. Follow these instructions to remove all motherboard and CPU board cabling.

Power cables

Disconnect all the power cables as shown.

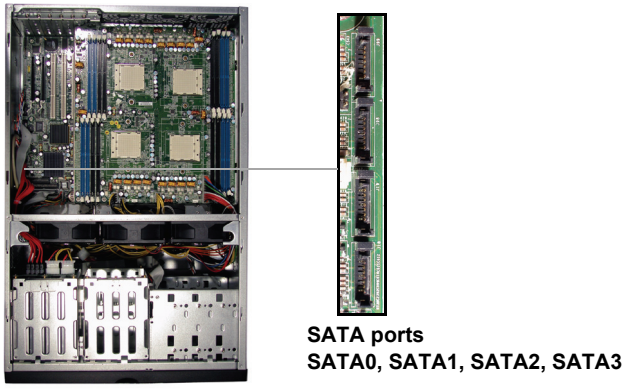


IDE cable (CD-ROM)



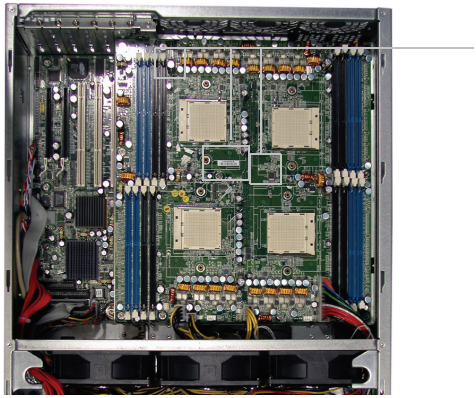
IDE socket for CD-ROM
PRI-IDE, SEC-IDE

SATA cables



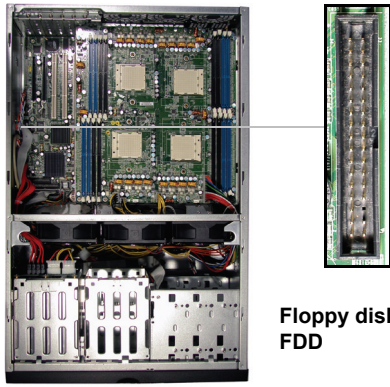
SATA ports
SATA0, SATA1, SATA2, SATA3

CPU fan power cables



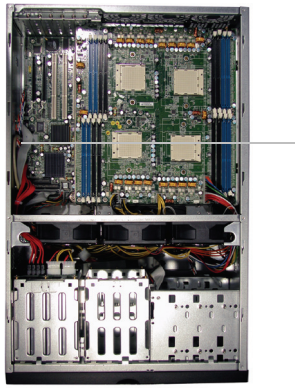
CPU fan pin headers. See“Fan header locations” on page 10 for more information.

Floppy disk drive cables



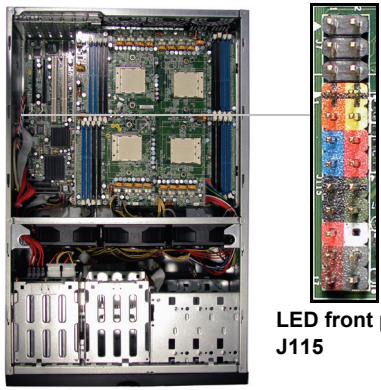
Floppy disk drive port
FDD

USB cables



USB pin header
J30, J31, J95

LED control board cables



LED front panel pin header
J115

LED Control board connector (J115) pin out

Function	Color	Pin	Pin	Color	Function
HDD LED	Orange	1	2	Blue	Green SW
		3	4	Orange	
REST	Blue	5	6		Power on SW
		7	8	Blue	
		9	10		
		11	12		
		13	14		
		15	16		
		17	18		

JP4/JP5 LAN LED

		JP4	JP5		
LAN1	Green	1	1	Green	LAN2
	Orange	2	2	Orange	

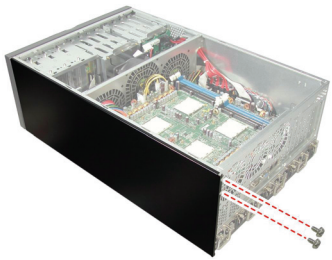
J119 ID Switch and J118 LED

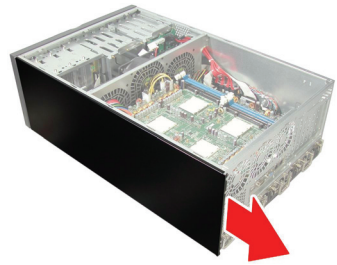
		J119	J118		
KB-LK	Orange	1	1		SPAC
	Black	2	2	Blue	

3.2.2 Replacing the CPU expansion board

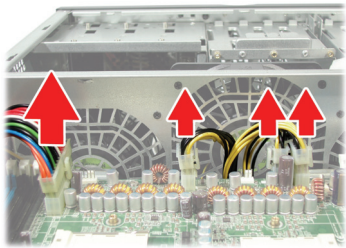
Follow these instructions to replace the CPU expansion board:

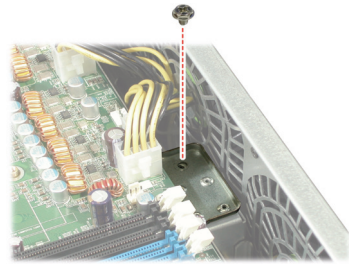
1. Remove the chassis cover. See *Removing the chassis cover* on page 13.
2. Remove the chassis side panel as shown.



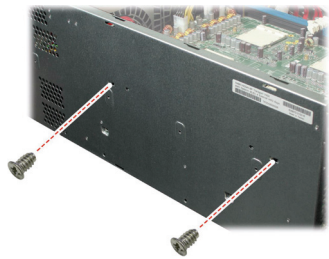


3. Remove the power cables from the CPU expansion board.





4. Remove the two countersunk screws from the side of the chassis.

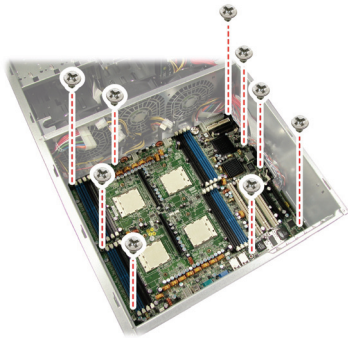


5. Remove the screw that secures the board to the chassis.
6. Lift the CPU expansion board from the chassis.
7. Replace the CPU expansion board as described in “Installing CPU expansion board” on page 18.

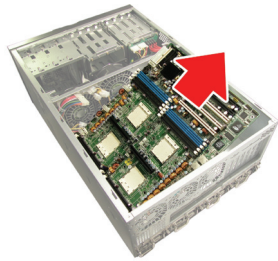
3.2.3 Replacing the motherboard

Follow these instructions to replace the motherboard from your B4881V50S4H.

1. Remove the chassis cover. See *Removing the chassis cover* on page 13.
2. Remove all cables to the motherboard. See *Disconnecting all motherboard cables* on page 33.
3. Remove the 10 screws as shown securing the motherboard to the chassis as shown, and lift the board free.



Note: The motherboard is fitted tightly into the chassis and will not lift straight out. You will need to lift one side of the board first and slide it out.



3.3 Replacing the slim CD-ROM drive

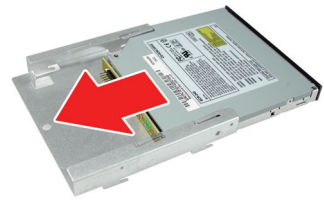
This section describes how to remove and replace the CD-ROM drive in your B4881V50S4H system.

1. Remove the chassis cover. See *Removing the chassis cover* on page 13.

2. Remove the power and data cables from the CD-ROM drive.

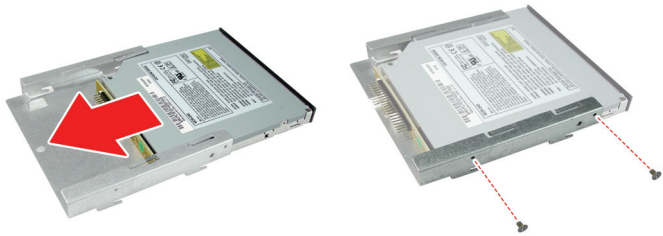
3. Press the release catch that secures the CD-ROM drive and slide the CD-ROM drive from the front of the chassis.

4. Remove the four screws that secure the CD-ROM drive in the cradle and remove the old unit.



5. Remove the two screws that hold the CD-ROM back-plane to the CD-ROM drive, and remove back plane.

6. Secure the backplane to the new CD-ROM drive with two screws.
7. Slide a new CD-ROM unit into the cradle and secure it with four screws.



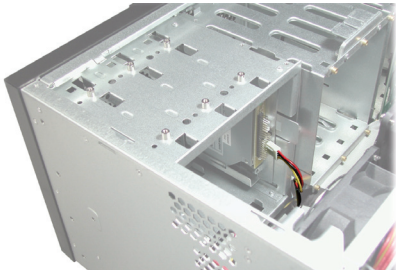
8. Slide the cradle with the new CD-ROM unit back into place in the chassis. The release catch will click and secure the cradle in place.
9. Replace the data and power cables.

3.4 Replacing the floppy disk drive

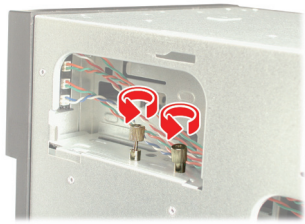
This section describes how to replace the SCSI backplane on your B4881V50S4H.

1. Loosen the two screws that secure the lower cover to the chassis of the B4881V50S4H. Slide the cover back and remove it to expose the service port for the floppy disk drive.

2. Remove the power and data cables from the floppy disk drive.



3. Loosen the two retaining screws that secures the floppy disk drive in place.



4. Slide the disk drive from the chassis.

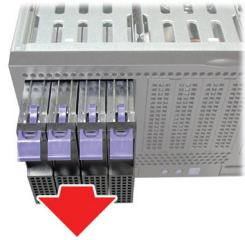
5. Slide the new unit into place, secure with the retaining screw and replace the power and data cables.

3.5 Replacing the SATA backplane

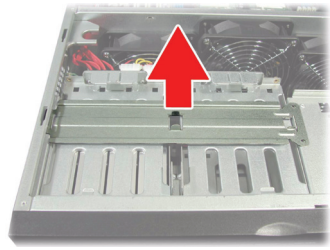
This section describes how to replace the SATA backplane on your B4881V50S4H.

1. Remove the chassis cover. See *Removing the chassis cover* on page 13.

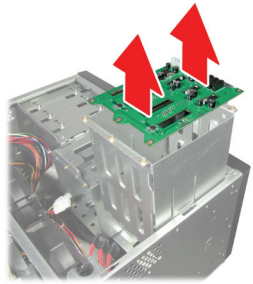
2. Remove all the SATA hot-swap HDD trays from the B4881V50S4H.



3. Remove all cables from the SATA backplane.
4. Remove the two screws holding the cradle locking bar in place and remove the bar.



5. Lift the disk drive cradle to the vertical position as shown. Remove the six screws and lift the backplane from the chassis.



6. Place a new backplane in position and secure in place with six screws.
7. Lower the disk drive cradle into place.
8. Replace the power and data cables.

3.6 Replacing power supplies

The B4881V50S4H has four hot-swap, redundant power supply bays.

To replace a power supply:

1. Unplug the power cable from the faulty power supply.
2. Loosen the retaining screw.
3. While pressing the release catch, pull the faulty power supply from the chassis using the handle.

4. Push the new power supply into place and secure with the retaining screw.

Note: When the CPU expansion board is installed, A bare minimum of three power supplies are required to run the B4881V50S4H. A fourth power supply should be installed as soon as possible in the event of a failure.

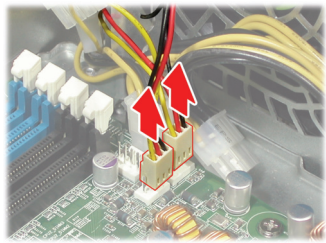
3.7 Replacing cooling fans

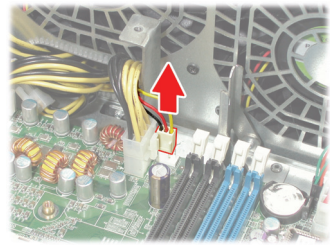
The B4881V50S4H requires three chassis cooling fans.

To replace a cooling fan:

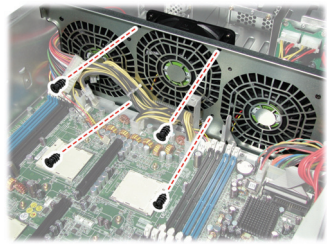
1. Remove the chassis cover. See *Removing the chassis cover* on page 13.
2. Remove the CPU expansion board as described in “Replacing the CPU expansion board” on page 37

3. Unplug the cooling fan power supply lead from the pin header on the mother board.

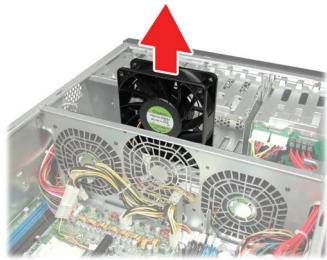




4. Remove the four screws that hold the fan to the chassis and remove the fan.



5. Place a new fan in position in the chassis and secure in place with four screws.



6. Plug the fan power supply into the pin header.

BIOS

Introduction

Your B4881V50S4H system includes a powerful TYAN Thunder K8QW Pro S4881 motherboard with Phoenix 8 Mbit LPC Flash ROM.

The BIOS is the motherboard's basic input/output system. The BIOS contains all the settings required to control the keyboard, display, disk drives, serial communications, and a number of miscellaneous functions. This section of the appendix describes the various BIOS settings that can be used to configure your system.

This section covers some aspects of BIOS. Consult the motherboard manual for a complete description.

Hardware monitor submenu

Use this screen to monitor hardware information. Use the up and down <Arrow> keys to select an item. Use the <Plus> and <Minus> keys to change the value of the selected option.

PhoenixBIOS Setup Utility		
Advanced		
CPUx Temperature	xxC	Item specific help
Sysx VRM temperature	xxC	
CPUx Fan Speed	xxxxRPM	
System Fan Speed	xxxxRPM	
CPUx VDD Voltage	xxV	
+12V	xxV	
+12V CPU Board	xxV	
+5v	xxV	
+5v CPU Board	xxV	
+3.3V	xxV	
AMD8131 Vcore	xxV	
VCK804 Vcore	xxV	
F1: Help ↑↓:Select Item +/-:Setup Values F9:Setup Defaults Esc:Exit ←→:Select screen Enter: Select ▶:Sub-menu F10:Previous Values		

Integrated devices submenu

Use this screen to view and alter the setup of integrated devices, including the USB configuration.

PhoenixBIOS Setup Utility		
Advanced		
USB Conrol	[Disabled]	Item specific help
USB BIOS Legacy Suport	[Disabled]	
SATA0 Controller	[Enabled]	
SATA1 Controller	[Enabled]	
Interrupt Mode	[PIC]	
▶NV RAID Configuration		
F1: Help ↑↓:Select Item +/-:Setup Values F9:Setup Defaults Esc:Exit ←→:Select screen Enter: Select ▶:Sub-menu F10:Previous Values		

Feature	Option	Description
USB control	• **Disabled** • On-board COM A • On-board COM B	Set USB controllers.
USB BIOS-legacy support	• **Disabled** • Enabled	Set support for USB keyboard and mouse.
SATA0 controller	• **Enabled** • Disabled	Set first serial ATA device.
SATA1 controller	• **Enabled** • Disabled	Set second serial ATA device.
Interrupt mode	• **PICt** • 8529/PIC	Select Interrupt Mode, 8259/PIC mode or APIC mode.
NV RAID configura-tion	**Menu Item**	Set NVidia RAID control.

Remote access configuration submenu

Use this screen to view the remote access configuration menu. This feature allows remote access to the Server using the serial port.

PhoenixBIOS Setup Utility		
Advanced		
Com Port Address	[Disabled]	Item specific help
Baud Rate	[300]	
Console Type	[VT100]	
Flow Control	[None]	
Console Connection	[Direct]	
Continue CR after POST	[Off]	
F1: Help ↑↓:Select Item +/-:Setup Values F9:Setup Defaults Esc:Exit ←→:Select screen Enter: Select ▶:Sub-menu F10:Previous Values		

Feature	Option	Description
Configure remote access type and parameters		
Com Port Address	• **Disabled** • On-board COM A • On-board COM B	Select the COM port address.
Baud Rate	• **300** • 1200	Specify the baud rate.
Console Type	• **VT100** • VT100, b-bit	Specify a console type.
Flow Control	• **None** • XON/XOFF	Enable flow control.
Console Connection	• **Direct** • Via modem	Specify whether the console is connected directly to the system or a modem is used to connect.
Continue CR after POST	• **Off** • On	Enable Console Redirection after OS has loaded.

Technical support

If a problem arises with this system, you should consult your dealer first for help. The system is likely to have been configured by your dealer, making him the most appropriate choice when seeking technical advice. Your dealer may also be close enough to visit with the hardware for servicing or testing.

Help resources

1. See the beep codes section in the motherboard manual
2. See the TYAN Web site for FAQs, bulletins, driver updates and other information: http://www.tyan.com
3. Only contact TYAN after first speaking with your dealer
4. Check the TYAN user group: alt.comp.periphs.mainboard.TYAN

Returning merchandise for service

If any problems occur during the product's warranty period, consult your system vendor or distributor before contacting TYAN. The warranty covers normal customer use of the product. The warranty does not cover damages sustained during shipping or failure due to alteration, misuse, abuse, or improper maintenance of the unit.

Note: A receipt or copy of your invoice, marked with the date of purchase, is required before any warranty service can be provided. You may obtain service by calling the manufacturer for a Return Merchandise Authorization (RMA) number. The RMA number should be displayed prominently on the outside of the shipping carton, and the package should be mailed prepaid. TYAN will pay to have the product shipped back to you.

B4881V50S4H User's Manual.

Document part number: D1652-100